

Chapter 1 — Purpose and Need

A group of oil and gas companies (Lance Oil and Gas [Western Gas Company], Barrett Resources Corporation [Williams], Devon Energy Corporation, Yates Petroleum Corporation, Pennaco Energy [Marathon Oil Corporation], and CMS Oil and Gas [Perenco S.A]), collectively identified as the Powder River Basin Companies (Companies), has notified the U.S. Department of Interior, Bureau of Land Management (BLM) and U.S. Department of Agriculture, Forest Service (FS) of their intent to develop additional coal bed methane (CBM) resources in Wyoming's Powder River Basin (PRB). Implementation of this project would continue and expand development of CBM that has been occurring in the PRB over the last few years. In general, the Companies propose to:

- Drill, complete, operate, and reclaim almost 39,400 new natural gas wells and
- Construct, operate, and reclaim various ancillary facilities needed to support the new wells, including roads, pipelines for gathering gas and produced water, electrical utilities, and compressors.

The proposed project would occur in a Project Area of almost 8 million acres (Figure 1–1). This Project Area encompasses all or parts of Campbell, Converse, Johnson, and Sheridan counties and all or parts of 18 fourth-order watersheds (sub-watersheds). The proposed project would involve both public and privately owned lands. The public lands include areas administered by the BLM, the Medicine Bow National Forest, and the state. Additional information on land ownership and jurisdiction is presented in Chapter 3.

Development of Oil and Gas on Federal Lands in the Powder River Basin

Development of oil and gas in the PRB is generally classified into two categories: CBM and non-CBM. Development of CBM resources began in the mid-1980s. With advancements in technology, development and production of CBM has been increasing substantially since the mid-1990s. In contrast, production of non-CBM resources was relatively stable from 1986 through 1991, but has been declining sharply since (BLM 2001f). Overall, oil and gas development in the PRB, exclusive of CBM, is expected to decline slowly (BLM 2001f).

Five sets of documents provide the primary guidance on development of oil and natural gas from federal lands and minerals estates in the Project Area. Two sets of these documents are the resource management plans (BLM 1985b and BLM 2001a), Final Environmental Impact Statements (FEISs), and Records of Decision (RODs) for the Buffalo and Casper Field Offices. The other three sets of documents provide the primary guidance for the Thunder Basin National Grassland (TBNG), which is administered by the Medicine Bow National Forest. These sets are the 1985 Land and Resource Management Plan (LRMP), FEIS,

and ROD for the Medicine Bow National Forest and TBNG; the 1994 FEIS and ROD for Oil and Gas Leasing on the TBNG; and the LRMP Revision, FEIS, and ROD. The FS released the ROD on the FEIS and proposed LRMP for the TBNG in July 2002 to replace the 1985 plan, as amended. However, leasing decisions on the area west of the coal outcrop line were deferred pending the cumulative effects analysis for CBM in this National Environmental Policy Act (NEPA) analysis. Thus, the 1985 LRMP, as amended by the 1994 oil and gas leasing decision, is still in effect for oil and gas leasing decisions west of the coal outcrop line.

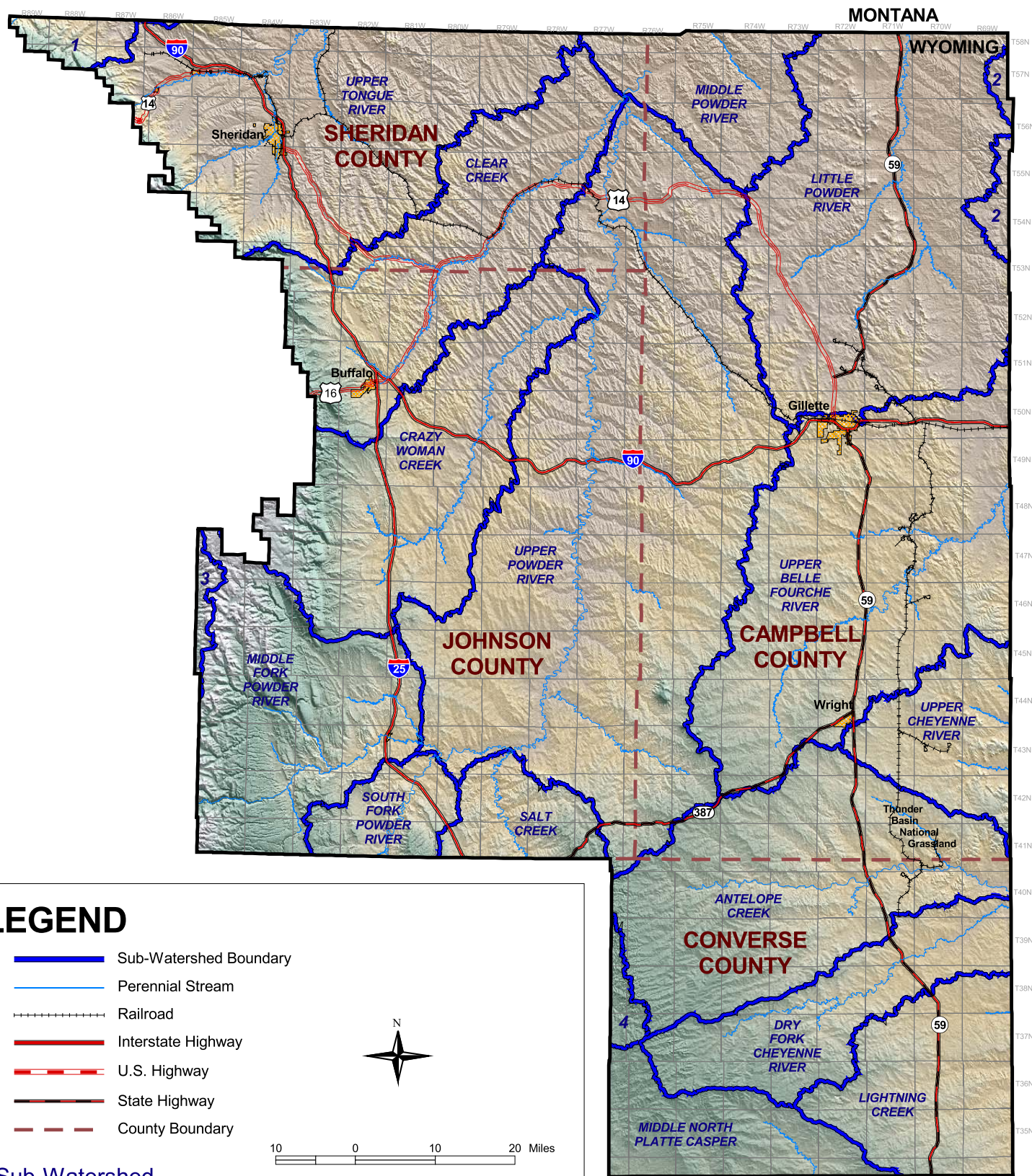
In addition to the five guidance documents, BLM and FS have conducted several specific analyses on development of CBM on federal lands. They include the American Oil and Gas Marquiss Field Coal Bed Methane Project Environmental Assessment (EA) (BLM 1992a), Exxon Pistol Point Coal Bed Methane Project EA (BLM 1992b), Gillette South Coalbed Methane Project Draft Environmental Impact Statement (DEIS) (BLM 1995b) and FEIS (BLM 1997a), Lighthouse Coal Bed Methane Project Environmental Assessment (BLM 1995c), Gillette North Coal Bed Methane Project Environmental Assessment (BLM 1996a), Wyodak CBM DEIS and FEIS (BLM 1999c and 1999d), and Wyodak Drainage CBM EA (BLM 2000b). These reports and their associated decision documents specifically address the development of CBM that has been occurring on federal lands since 1992.

Purpose of and Need for the Proposed Action

The Companies hold valid federal, state, and private leases for oil and natural gas in the Project Area. The leases have created contractual and property rights for the Companies from the United States, the State of Wyoming, and private mineral owners to develop oil and natural gas resources. The purpose of the Companies' proposal is to extract, transport, and sell oil and natural gas at a profit from the portions of the Project Area leased by them.

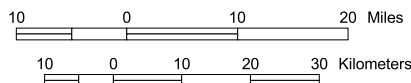
BLM and FS recognize the extraction of oil and natural gas is essential to meeting the nation's future needs for energy. As a result, private exploration and development of federal oil and gas reserves are integral to the agencies' oil and gas leasing programs under the authority of the Mineral Leasing Act of 1920, as amended by the Federal Land Policy and Management Act (FLPMA) of 1976 and the Federal Onshore Oil and Gas Leasing Reform Act of 1987. The oil and gas leasing program managed by BLM and FS encourages the development of domestic oil and gas reserves and reduction of the U.S. dependence on foreign sources of energy.

As a result of the contractual and property rights created by the valid leases, the direction set forth in BLM's oil and gas leasing program, the status of BLM's two RMPs, and the FS' LRMP, Revised LRMP, and FEIS for Oil and Gas Leasing, BLM and FS need to evaluate the level of development of oil and natural gas in the Project Area over the next 10 years. Specifically, BLM and FS need to evaluate the direct, indirect, and cumulative effects of the Proposed Action and reasonable alternatives and the conformance of this action with the associated RMPs.



LEGEND

- Sub-Watershed Boundary
- Perennial Stream
- + + + + + Railroad
- Interstate Highway
- - - U.S. Highway
- State Highway
- - - County Boundary



Sub-Watershed

- 1--Little Bighorn River
- 2--Little Missouri River
- 3--North Fork Powder River
- 4--Salt Creek

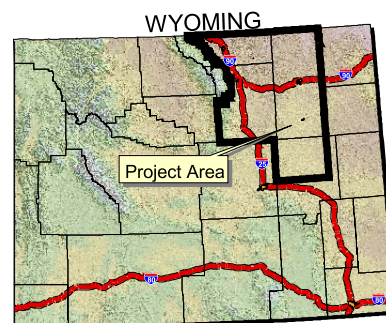
POWDER RIVER BASIN
OIL & GAS PROJECT FEIS

**FIGURE 1-1
PROJECT LOCATION MAP**

ANALYSIS AREA: Campbell, Converse, Johnson & Sheridan Counties, Wyoming	
DATE: 12/23/02	AcView File: C:\1011_1\data\maps.apr Layout: Project Location Map
DRAWN BY: MSH	

Existing CBM Well location data provided by the Wyoming Oil and Gas Commission. Thunder Basin National Grassland data provided by the US Forest Service. All other data provided by the Bureau of Land Management--Buffalo Field Office and Casper Field Office.

Transverse Mercator Projection
1927 North American Datum
Zone 13



When the five sets of primary guidance documents identified above were prepared, the levels of development for oil and natural gas anticipated at the time were less than are currently proposed by the Companies and the agencies' current Reasonably Foreseeable Development (RFD) Scenario (Appendix A). In particular, the current and proposed levels of development of CBM were not specifically analyzed. Consequently, BLM and FS need to determine conformance of the Proposed Action and alternatives to that action with the land use plan decisions described in the RMPs for Buffalo and Casper, the LRMP for Medicine Bow National Forest, and the FEIS for Oil and Gas Leasing on TBNG.

Therefore, this FEIS serves five purposes. First, it provides the basis to analyze and disclose the impacts of the level of development proposed in the Project Area (both under the Proposed Action and RFD scenarios). It addresses the effects of implementing a level of development of oil and natural gas within the Project Area that is conceptual in nature. The wells, roads, pipelines, and ancillary facilities depicted in this FEIS represent a proposed level of development and tentative locations for these facilities. The final location for each component would be established through future site-specific analyses that BLM and FS would require for each facility. These analyses would occur when the Companies file applications for each component, such as an Application for Permit to Drill (APD), a FS Special Use Permit (SUP), or a BLM Right-of-Way (ROW) Grant.

Second, this FEIS provides the means for the BLM and FS to provide federal minerals to meet the nation's energy needs. It also facilitates protection of the financial interest of the United States by preventing drainage of federal minerals.

Third, the FEIS identifies mitigation measures to address issues and conditions of approval for the subsequent site-specific applications for individual locations. These measures and conditions would be incorporated into the permitting process for the individual facilities (again through the APD, SUP, or ROW Grant processes).

Fourth, for the FS, the NEPA analysis documented in this FEIS will be used to assess the lease stipulations in the revised (2002) LRMP to determine whether the lease stipulations need to be modified or if new stipulations need to be developed for the 58,460 acres of the TBNG west of the coal outcrop line that have potential for development of CBM. In the July 2002 ROD for the FEIS and LRMP revision for the TBNG, these decisions were deferred pending completion of this FEIS.

Finally, BLM also is using the outcome of the impact analysis to review the existing RMP decisions. This includes decisions concerning the level of resource use and conditions of use. If the decision makers determine that one or both of the agencies will amend one or both land use plans, the analyses contained in this FEIS will provide the basis for the amendments.

NEPA Process, Including Tiering and Decision Making

NEPA and directives by the Council on Environmental Quality (CEQ) require BLM and FS to analyze proposed actions that would involve federal lands and leases in terms of their potential effects on the human environment. Furthermore, regulations that implement the Mineral Leasing Act of 1920 require BLM and FS to review and act on APDs and the attached Surface Use Plans of Operations (SUPO) and to decide on the requirements for surface occupancy specified in the SUPO. BLM and FS also issue ROW Grants and SUPs to construct and operate linear transportation facilities, such as roads and pipelines, across federal lands under Title V of FLPMA and under the Mineral Leasing Act.

The analysis of effects to the human environment discloses the potential environmental consequences of proposed actions and alternatives. BLM and FS also are responsible for establishing provisions to ensure that facilities and disturbed lands are reclaimed if an oil and gas operator would fail to complete adequate reclamation efforts. Bonds are required for oil and gas operations on federal leases to indemnify the government for safe rehabilitation, royalty payments, and civil penalties. Bonds also are required for ROWs on federal lands.

The BLM, Buffalo Field Office in Buffalo, Wyoming, is the lead federal agency responsible for conducting the NEPA analysis and preparing this FEIS. The FS (Medicine Bow National Forest) is a cooperating agency and is responsible for protecting non-mineral resources on National Forest System (NFS) land in TBNG. The Proposed Action and the alternatives were developed by an oversight team consisting of BLM, FS, State of Wyoming agencies, five conservation districts, and the four counties. Wyoming agencies specifically designated to represent the state as a cooperating agency on this team included the Office of Federal Land Policy, Wyoming Department of Environmental Quality (WDEQ), the Wyoming Oil and Gas Conservation Commission (WOGCC), the Wyoming State Engineer (WSEO), and Wyoming State Geological Survey. The state also designated eight additional agencies to assist these five agencies.

This document provides the responsible agencies with information that can be used as the basis for a final decision that considers factors relevant to the proposal. Scoping issues and concerns raised by the public and agencies drove the development of alternatives and focused the environmental impact analysis. This FEIS documents (1) the analysis of effects that could result from implementation of the Proposed Action or alternatives, (2) the development of protection measures necessary to avoid, minimize, reduce, eliminate, or rectify environmental consequences, and (3) the review of BLM's existing RMP decisions.

The regulations that implement NEPA encourage tiering in an EIS. Tiering is the process of referencing information presented in other NEPA documents that were prepared previously, such as EISs, to minimize repetition. This FEIS is specifically tiered to the five sets of guidance documents identified previously.

Finally, this FEIS is not a decision document; it documents the potential environmental consequences of implementing the proposed oil and gas development

project and alternatives. The decisions about the FEIS and proposed plan amendment will be documented in separate RODs (one for the BLM and one for the FS) signed by the agency's responsible official. Decisions by BLM and FS will apply to federal lands and leases administered by BLM and the FS. Decisions by other jurisdictions to issue or deny approvals related to this proposal may be aided by the disclosure of effects available in this analysis.

Decisions to be Made Based on this NEPA Analysis

The decision makers for the BLM (Wyoming State Director) and FS (Medicine Bow-Routt National Forests Supervisor) will decide based on the analysis documented in this FEIS whether the proposed action is in conformance with the land use plan decisions, new mitigation measures need to be adopted, or if any of the management plans will be amended. They also will decide whether current RMP or LRMP lease stipulations are adequate or if new stipulations need to be developed.

The FS has released a ROD, Revised LRMP, and FEIS for the TBNG (July 2002). East of the coal outcrop line new leasing decisions are included in the July 2002 ROD. Currently, the area west of the coal outcrop is available for leasing under the 1994 ROD for Oil and Gas Leasing on the TBNG. After the analysis of cumulative effects contained in this FEIS is available, the NEPA analysis documented in this FEIS will be used to assess the lease stipulations in the revised (2002) LRMP to determine whether the lease stipulations need to be modified or if new stipulations need to be developed for the 58,460 acres of the TBNG west of the coal outcrop line that have potential for development of CBM. In the July 2002 ROD for the FEIS and LRMP revision for the TBNG, these decisions were deferred pending completion of this FEIS.

The FS will include a decision on whether or not to implement the stipulations identified in the leasing analysis conducted for the 2002 Revised LRMP in the ROD accompanying this FEIS. In addition, the ROD will include a decision on stipulations and forest plan standards and guidelines needed to implement mitigation measures identified in this FEIS.

Decisions to be Made Following Additional NEPA Analysis

The RODs associated with this FEIS will not be the final review or the final approvals for the actions associated with the PRB oil and gas project. BLM and FS must analyze and approve each component of the project that involves disturbance of federal lands on a site-specific basis. A separate authorization(s) from BLM (and other permitting agencies) is required prior to approval of any APD, ROW Grant, or SUP before any construction can occur.

The APD includes a surface use program and a drilling plan. The detailed information to be submitted under each program is identified in Onshore Oil and Gas

Order No. 1 and 43 CFR Part 3162.3. An on-site inspection of the locations proposed for the well, access road, pipelines, and other areas of proposed surface use would be conducted before approval. The inspection team would include BLM, FS (if construction would occur on NFS lands), the lessee or its designated representative, and the primary drilling and construction contractors. Where applicable, federal grazing lessees would be invited to participate. For inspections that involve split estate lands (lands with both private surface and federal minerals ownership), BLM also would invite the surface owner to attend the on-site.

The on-site inspection would identify potentially sensitive areas and the environmental consequences associated with the proposal at each location and apply the methods needed to mitigate the effects on a site-specific basis. The on-site inspection could include site-specific surveys for cultural resources or threatened or endangered species, if the potential for these resources to occur exists on or near the proposed disturbance. After the site inspection, the APD may be revised or site-specific mitigation measures may be added as Conditions of Approval to the APD, consistent with applicable lease terms, to protect surface or subsurface resource values near the proposed activity. These conditions may include adjusting the proposed locations of well sites, roads, and pipelines; identifying the construction methods to be employed; and establishing reclamation standards for the lands.

Since the ROD for the Wyodak FEIS was issued, BLM has required that CBM projects be submitted as Plans of Development (POD). A POD is a group of wells and their supporting infrastructure (such as roads, pipelines, power lines, water discharge points, booster stations, and compressor stations) for a geographic area or sub-watershed. The POD helps the operators develop a logical, economical, environmentally sound CBM project that the BLM can efficiently process and approve.

BLM is responsible for conducting an environmental analysis on BLM lands (BLM surface ownership and all federal ownership of mineral, split estate), preparing the documentation, and specifying mitigation measures to protect surface resources for APD approval. The FS would have similar responsibilities on NFS lands. BLM is responsible for approval of the drilling program, protection of ground water and other subsurface resources, and final approval of the APD on both BLM and NFS lands.

Access roads and pipelines on land managed by BLM outside the applicant's lease would require a ROW Grant. Likewise, facilities on NFS lands would require an SUP. The APD could be acceptable as an application for a ROW Grant or SUP for off-lease facilities if it provides sufficient detail of the entire proposal.

After drilling, routine well operations would not require approval. However, BLM would have authority for approving a variety of related activities. Any changes to an approved APD, certain subsequent well operations, and all subsequent new surface disturbances, such as workover pits, would require prior approval. Complete details of subsequent well operations are set forth in 43 CFR 3162.3–2. Disposal of produced water from federal leases would require prior approval, as outlined in Onshore Oil and Gas Order No. 7. BLM also would approve plugging and abandonment of wells, protection measures for hydrogen sul-

fide (if necessary), gas venting, gas flaring, and certain measures for handling production.

Authorizing Actions

A variety of federal, state, county, and local permitting actions would be required to implement any of the alternatives. Table 1–1 lists the major federal and state permits, approvals, and consultations likely to be required for the PRB oil and gas project. However, the list is not necessarily complete. In addition, various county and local permitting and approval actions may be required for any alternatives selected by the decision makers.

Table 1–1 Major Federal and State Permits, Approvals, and Consultations Potentially Required for the PRB Oil and Gas Project

Issuing Agency/Permit Approval Name	Nature of Regulatory Action	Applicable Project Component
<i>Federal Permits, Approvals, and Authorizing Actions</i>		
<i>USDI – Bureau of Land Management</i>		
Permit to Drill, Deepen, or Plug Back (APD), CBM Plan of Development (POD), and Sundry Notice, plugging and abandonment, venting, and flaring Rights-of-Way Grant and Temporary Use Permit	Controls drilling and production for oil and gas on federal onshore leases.	Wells and production facilities.
Cultural Resource Use Permit	Right-of-way grant on BLM-managed lands.	Oil and gas pipelines, roads, facilities, and ancillary structures on off-lease BLM-managed lands.
Pesticide Use Permit	Archaeological surveys and limited testing on public lands. Archaeological data recovery (excavation) of sites on public lands.	All surface-disturbing activities.
National Noxious Weed Act Compliance	Control of pests.	Wells, roads, and ancillary facilities.
Material Sales	Controls noxious weeds.	Any occurrence of noxious weeds on or near project facilities.
	Sales of sand, gravel, and riprap.	Construction activities
<i>USDA – Forest Service</i>		
Special Use Permit, Surface Use Program of APD	Surface disturbance on FS-managed lands.	Wells, roads, pipelines, and facilities on FS-managed lands.
Special Use Permit (Cultural Resources)	Archaeological surveys and limited testing on public lands. Archaeological data recovery (excavation) of sites on public lands.	All surface-disturbing activities.
<i>USDI Fish and Wildlife Service</i>		
Endangered Species Act Compliance (Section 7)	Protects threatened and endangered species.	Any activity potentially affecting species listed as or proposed for listing as threatened or endangered.
Migratory Bird Treaty Act	Protects migratory birds.	All surface-disturbing activities.
Bald Eagle Protection Act	Protects bald and golden eagles.	All surface-disturbing activities.
<i>Advisory Council on Historic Preservation</i>		
Cultural Resource Compliance (Section 106)	Protects cultural and historic resources. Coordinated with the Wyoming State Historic Preservation Officer (SHPO).	All surface-disturbing activities.
<i>U.S. Department of Army Corps of Engineers</i>		
Permit to Discharge Dredged or Fill Material (Section 404 Permit) ¹	Authorized placement of dredged or fill material in waters of the United States or adjacent wetlands.	All surface-disturbing activities.
<i>U.S. Department of Transportation</i>		
Construction and operation of natural gas pipelines.	Prescribes minimum safety requirements for pipeline facilities and the transportation of gas, including pipeline facilities.	Natural gas pipelines.

Table 1–1 Major Federal and State Permits, Approvals, and Consultations Potentially Required for the PRB Oil and Gas Project

Issuing Agency/Permit Approval Name	Nature of Regulatory Action	Applicable Project Component
<i>State Permits, Approvals, and Authorizing Actions</i>		
<i>Wyoming State Engineer's Office</i>		
Permit to Appropriate Ground Water	Registering groundwater rights for all uses, except stock and domestic.	Wells.
Permit to Construct a Reservoir ¹	Ensures the safety and structural integrity of water storage facilities.	Water storage facilities.
Certification by a Wyoming-licensed professional engineer	Required for dams greater than 20 feet in height with a storage capacity of 50 acre-feet or more.	Water storage facilities.
Permit to Appropriate Surface Water	Applications for any request for putting surface waters of the state to a beneficial use.	Facilities to transport or store surface waters.
Permit for Land Application of Produced Water ¹	Authorizes the application of produced water to lands for disposal.	Land Application Disposal facilities.
Permit to Appropriate By-product Water for Additional Beneficial Uses	Authorizes the use of by-product water for beneficial uses.	Facilities to dispose of produced water when used for additional beneficial uses, such as stock watering.
<i>Wyoming Department of Environmental Quality</i>		
National Pollutant Discharge Elimination System (NPDES) Individual Coal Bed Methane Permit	Authorizes discharge of produced water to surface waters of the state.	Any point-source surface discharge.
NPDES General Permit for Storm Water Discharges	Controls discharge of storm water pollutants associated with industrial and construction activities.	Construction that disturbs 5 or more surface acres of land and gas production facilities that have had a discharge of a reportable quantity
New Source Review (NSR) Permit	Controls emissions from new or modified sources.	All polluting emission sources, including compressor engines and portable diesel and gas generators.
Fugitive Dust Control	Control fugitive dust emissions to comply with Wyoming Air Quality Standards and Regulations Chap. 3, Sec. 2(f).	Construction of facilities and vehicle traffic.
<i>Wyoming Department of Transportation</i>		
Access Permit	Authorizes access roads tying into state or federal highways.	All project roads
<i>Wyoming Oil and Gas Conservation Commission</i>		
Permit to Use and Construct Earthen Pit for Temporary Use or for Reserve Pit	Authorizes the construction and use of an earthen pit for oil and gas wells.	Oil and gas wells.
Permit to Drill/Deepen/Plug Back	Authorizes the drilling, deepening, or plugging of oil and gas wells.	Oil and gas wells.
Permit to Use and Construct Earthen Pit for Retention of Produced Water	Authorizes the construction and use of an earthen pit for the storage and evaporation of produced water.	Oil and gas wells.
<i>Wyoming State Historic Preservation Office</i>		
Section 106 Cultural Resource Consultation	Determines significance of cultural resources potentially affected by surface-disturbing activities.	All surface-disturbing activities.
Note:		
1. BLM also has authority for these approvals on federal leases through APDs/PODs ensure compliance with regulations.		